

REMARKS

Claims 1-33 remain pending in this application. Each of the pending claims is believed to define an invention that is novel and unobvious over the cited references. Favorable reconsideration of this case is respectfully requested.

Claims 1-2, 22, 25-27, and 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,625,316 to Maeda in view of U.S. Patent Number 6,393,163 to Burt.

Each of Claims 1, 27, and 29 now recites that each frame of a modified composite video sequence is modified by editing the original camera motion layer, *without editing any frame of the original video sequence*. Thus, each frame of the modified composite video sequence may be modified by only editing the original camera motion layer. There is no need to edit any frame of the original video sequence, which is in direct contrast to the cited art. For example, as is described below, Maeda describes a process which is performed on individual frames of video in sequence. An input frame of video containing foreground objects is processed, those objects are extracted, and then those objects are (potentially in a modified form) combined with a background image to make an output frame of video.

In the “Response to the Arguments” section on page 2 of the Office Action, it is noted that Maeda describes modifying the frames of the original video sequence that correspond to the main object. The frames of the original video sequence that correspond to the background remain unchanged. Accordingly, it is recognized that the process described by Maeda requires the frames of the original video sequence to be modified in order to create the modified sequence. For example, as shown, e.g., in Fig. 2 (see, e.g., reference numerals S103, S104, S112), Fig. 6 (see, e.g., reference numerals S120, S121, S125), col. 15, lines 16-20, and col. 17, lines 41-45 of Maeda, the method used in Maeda edits frames of the video sequence.

Maeda describes extracting foreground objects and applying modifiers to individual objects *in individual frames of the video sequence*, as noted, e.g., at col. 15, line 13 and at col. 17, line 33 ("encoded in units of frames"); it is further noted that col. 17, lines 41-45 discuss how the processing of a still image is equivalent to the processing of a single frame of video, to show that the frame-based techniques of Maeda are also applicable to still images. Hence, ***Maeda does not***

teach that each frame in a modified composite video sequence is modified by editing the original camera motion layer, without editing any frame of the original video sequence.

Burt does not supplement Maeda to teach or suggest the claimed invention. As an initial matter, Burt teaches away from the claimed invention, which is an indication of non-obviousness, see MPEP 2141.03 and W.L. Gore & Associated, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied 469 U.S. 851 (1984). Moreover, there is no teaching or suggestion in the prior art to combine Burt with Maeda. Burt relates to a mosaic based image processing system, see column 1, lines 19-22 of Burt. Persons skilled in the art of mosaic generation would necessarily be skilled in such mathematical techniques as frame alignment, frame-to-frame motion estimation, pixel statistical modeling and other imaging processing techniques. Tools used by such persons might include commercial mosaic generation software such Photo Vista Panorama or Adobe Photo Shop.

In comparison, the present invention relates to the field of video editing systems. Persons skilled in the art of video editing systems are more familiar with the technical aspects of audio/video streams and creative aspects of artistic modification. Tools used by such persons might include commercial video editing software such as Adobe Premiere or Final Cut Pro. A person skilled in either of the art of mosaic generation or the art of video editing would not be familiar with the tools and techniques of one skilled in the other art. Accordingly, there is no motivation in the prior art to suggest the combination of the techniques of Maeda with the techniques of Burt.

Furthermore, even if the cited references were combinable, such combination does not render the claimed invention obvious. Burt does not supplement Maeda to teach or suggest at least that a composite modified video sequence is obtained without editing any frame of the original video sequence as is recited in each of the rejected independent claims. Burt describes a method for generating composite mosaics for the purposes of 1) a mosaic based display system including an image printing system, 2) a surveillance system and 3) a mosaic based compression system. Please see column 2, lines 52-55 and column 4, lines 22-35 of Burt.

The mosaic based display system including an imaging printing system involves displaying mosaics, potentially with image information such as highlighting and/or color enhancement, and printing those mosaics to hard copies such as a photographic negative or slide. Please see column

12, line 56 – column 14, line 14 of Burt. This approach also involves displaying and printing mosaics. Please see column 14, lines 15-35 of Burt. The mosaics are not modified. The mosaic based display system described in Burt bears absolutely no relationship to the generation of a composite modified video sequence as recited in the rejected claims. There is simply no disclosure teaching or suggestion of at least this claimed feature in Burt.

The surveillance system of Burt involves generating a mosaic from an image sequence. The mosaic is then used to detect changes in a scene for surveillance purposes. This process requires that the mosaic information remain accurate, without any editing. Please see column 20, line 39 – column 21, line 18 of Burt. Accordingly, the surveillance system is not relevant to the editing application described in the present application.

The mosaic based compression system of Burt involves generating mosaics from an image sequence, transmitting mosaics in order to optimize video compression bandwidth, and restoring an image sequence from a transmitted mosaic during decompression. Please see column 14, line 36 – column 18, line 58 of Burt. Again, this case requires that the transmitted mosaics are maintained as accurate as possible, so that the decompressed video is as close a possible to the compressed version. The use of Burt in a video editing system such as the one in the present application does not logically follow.

Thus, it can be seen that each of the scenarios described in Burt require that the mosaic be unmodified, which teaches away from the claimed invention. In comparison, the independent claims recite that a composite modified video sequence is obtained without editing any frame of the video sequence. Neither Burt or Maeda teach or suggest this feature, alone or in combination. Therefore, the withdrawal of this rejection is respectfully requested.

Claims 3-5 and 23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda in view of Burt et al. and further in view of U.S. Patent Number 6,504,569 to Jasinschi et al.

Each of claims 3-5 and 23 depend from the independent claims discussed above and are patentable for at least the reasons discussed above. Jasinschi does not supplement Burt or Maeda to teach or suggest the claimed invention. Therefore, the withdrawal of this rejection is respectfully requested.

Claims 6, 13 and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda in view of Burt further in view of U.S. Patent Number 6,628,303 to Foreman et al. Each of these claims depends from the independent claims discussed above and is patentable for at least the reasons discussed above regarding the independent claims. Foreman et al. does not supplement Maeda and Burt to teach or suggest the claimed invention. Therefore, the withdrawal of this rejection is respectfully requested.

Claims 7-12, 14, 16-21, 24, 28 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable Maeda in view of Burt and further in view of U.S. Patent Number 6,204,840 to Petelycky et al.

Each of claims 7-12, 14, 16-21, 24 and 28 depend from the independent claims discussed above and are patentable for at least the reasons discussed above. Petelycky does not supplement Maeda and Burt to teach or suggest the claimed invention. Independent claim 30 and its dependent claims also include the feature of the composite modified video sequence being obtained without editing each frame of the original video sequence. Consequently, independent claim 30 and its dependent claims are patentable for at least the reasons discussed above. Moreover, claim 30 recites editing camera motion parameters that detect camera movement with respect to camera motion layers. None of these cited references disclose, teach or suggest this feature. Accordingly, independent claim 30 and its dependent claims are allowable for this additional reason.

In view of the above, it is clear that the cited references do not teach or suggest the claimed invention. Therefore, the withdrawal of this rejection is respectfully requested.

For at least these reasons, therefore, it is respectfully submitted that Claims 1-33 are allowable over the cited prior art. Applicants respectfully request withdrawal of the above-mentioned rejections.

There are additional reasons for which various dependent claims are respectfully submitted to be allowable over the cited prior art, examples of which were noted in Applicants' previous Amendments and Replies. These arguments will not be repeated here in detail; however, Applicants maintain that none of them are contradicted by the Office Action's discussion at pages 2-4. For example, no part of this discussion addresses any of the arguments relating specifically to camera-motion layers (see above). Furthermore, at no point in this discussion does the Office

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Action address the question of Fig. 3F of Petelycky et al. being directed to audio effects, rather than video effects.

While Applicants do not necessarily concur with the Office Action's characterizations of the claims and/or the references with regard to other claimed features, Applicants choose not to discuss each such feature. Consequently, the lack of explicit discussion is not to be understood as indicating tacit agreement with such characterizations.

If the Examiner is of the opinion that the prosecution of this application would be advanced by a personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

The Commissioner is authorized to charge any fee necessitated by this Amendment to our Deposit Account No. 22-0261.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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